WHAT IS CLAIMED IS:

1. A method for generating a timing signal in a communication receiver, the method comprising:

generating a correlated signal from a received signal;

deriving phase information of the correlated signal; and

generating a timing signal using the phase information.

2. The method of claim 1 further comprising:

wherein the generating the correlated signal further includes correlating the received signal with a standard Barker symbol.

3. The method of claim 1 wherein:

the deriving the phase information includes generating a phase error signal of the correlated signal;

the generating the timing signal includes using the phase error signal to generate the timing signal.

4. The method of claim 3 wherein each of a plurality of symbol intervals of the correlated signal includes a plurality of sample times, wherein each sample time corresponds to a sample position of a plurality of sample positions, wherein:

the generating the timing signal includes calculating an indication of a variance of the phase error signal for each sample position over the plurality of symbol intervals.

5. The method of claim 4 wherein:

the generating a timing signal further includes determining a sample position of the plurality having a minimum indication of the variance as determined by the calculating an indication of the variance;

wherein the timing signal is based upon the indication of the variance of the sample position having the minimum indication of the variance.

6. The method of claim 5 further comprising:

generating a carrier error signal using the indication of the variance of the sample position having the minimum indication of the variance.

7. The method of claim 6 wherein the carrier error symbol is based upon an average phase error of a sample position over the plurality of symbol intervals for the sample position having the minimum indication of the variance.

8. The method of 4 wherein the calculating an indication of the variance further includes for each sample position, calculating a sum of values of the phase error signal over the plurality of symbol intervals.

9. The method of claim 4 wherein the indication of a variance of the error signal for each sample position is calculated by the formula below or an equivalent thereof:

$$\theta_{ERR}VAR(k) = \max_{0 \le n \le I-1} \{|\theta_{ERR}(n22+k)|\} - \tfrac{1}{I}\left|\sum_{n=0}^{I-1} \theta_{ERR}(n22+k)\right|;$$

wherein $\theta_{ERR}(m)$ is the phase error signal, k is the sample position, and I is the number of symbol intervals.

10. The method of claim 4 wherein the indication of a variance of the error signal for each sample position is calculated by the formula below or an equivalent thereof:

$$\theta_{ERR}VAR(k) = \sum_{n=0}^{I-1} \theta_{ERR}^2(n22+k) - \tfrac{1}{I}\left[\sum_{n=0}^{I-1} \theta_{ERR}(n22+k)\right]^2 ;$$

wherein $\theta_{ERR}(m)$ is the phase error signal, k is the sample position, and I is the number of symbol intervals.

11. The method of claim 1 further comprising generating a carrier error signal using the phase information.

12. The method of claim 11 further comprising correcting errors in the received signal due to differences in a receiver oscillator versus a transmitting oscillator using the carrier error signal.

13. The method of claim 1 wherein the timing signal is indicative of a symbol boundary in a synchronization pattern of a data packet of the received signal.

14. The method of claim 1 wherein:

the timing signal is indicative of a symbol boundary in a synchronization pattern of a data packet of a received signal;

wherein the synchronization pattern includes symbols of a first polarity and symbols of a second polarity different from the first polarity, wherein the deriving phase information of the correlated signal further includes adjusting to remove information due to symbols being of different polarities

15. The method of claim 1 wherein data is encoded in the received signal as per the WLAN 802.11 wireless protocol.

16. A communication receiver comprising:

means for generating a correlated signal from a received signal;

means for generating a phase error signal from the correlated signal;

means for generating a timing signal from the phase error signal.

17. The communication receiver of claim 16 wherein the means for generating the timing signal further includes means for generating a carrier error signal.

18. A timing detector for a communication receiver, the timing detector comprising:

a correlator coupled to receive a received signal, the correlator correlating the received signal to produce a correlated signal;

a phase information module coupled to receive the correlated signal, the phase information module deriving phase information of the correlated signal;

a timing signal module coupled to receive the phase information, the timing signal module providing a timing signal, the timing signal module generating the timing signal using the phase information.

19. The timing detector of claim 18 wherein the phase information includes a phase error signal of the correlated signal, wherein the timing signal module generates the timing signal using the phase error signal.

20. The timing detector of claim 19 wherein the timing signal module includes a variance calculation module, the variance calculation module calculates an indication of a variance of the phase error signal for each sample position of a plurality of sample positions over a plurality of symbol intervals of the phase error signal, wherein each of a plurality of symbol intervals of the correlated signal includes a plurality of sample times, wherein each sample time corresponds to a sample position of the plurality of sample positions.

21. The timing detector of claim 20 wherein the timing signal module further comprises:

a variance minimum module coupled to the variance calculation module, the variance minimum module determines a sample position of the plurality having a minimum indication of the variance of the indications calculated by the variance calculation module;

wherein the timing signal is based upon the indication of the variance of the sample position having the minimum indication of the variance.

22. The timing detector of claim 21 further comprising:

a carrier error signal module, the carrier error signal module generating a carrier error signal using the sample position having the minimum indication of the variance.

23. The timing detector of 22 wherein the carrier error symbol is based upon an average phase error of a sample position over the plurality of symbol intervals for the sample position having the minimum indication of the variance.

24. The timing detector of claim 21 wherein the variance calculation module further includes a shift register and an adder coupled to receive the phase error signal, the shift register including a plurality of shift register positions, each shift register position for storing a sum of values of the phase error signal over the plurality of symbol intervals for a sample position, wherein the sum of values for a sample position is used to calculate the indication of a variance for the sample position.

25. The timing detector of claim 20 wherein the variance calculation module calculates an indication of a variance of the phase error signal for each sample position of a plurality of sample positions over a plurality of symbol intervals of the phase error signal by the formula below or a mathematical equivalent thereof:

$$\theta_{ERR}VAR(k) = \max_{0 \le n \le I-1} \{|\theta_{ERR}(n22+k)|\} - \tfrac{1}{I}\left|\sum_{n=0}^{I-1} \theta_{ERR}(n22+k)\right|;$$

wherein $\theta_{ERR}(m)$ is the phase error signal, k is the sample position, and I is the number of symbol intervals.

26. The timing detector of claim 20 wherein the variance calculation module calculates an indication of a variance of the phase error signal for each sample position of a plurality of sample positions over a plurality of symbol intervals of the phase error signal by the formula below or a mathematical equivalent thereof:

$$\theta_{ERR}VAR(k) = \sum_{n=0}^{I-1} \theta_{ERR}^{2}(n22+k) - \tfrac{1}{I}\left[\sum_{n=0}^{I-1} \theta_{ERR}(n22+k)\right]^{2};$$

wherein $\theta_{ERR}(m)$ is the phase error signal, k is the sample position, and I is the number of symbol intervals.

27. The timing detector of claim 18 wherein the timing signal module generates a carrier error signal using the phase information.

28. The timing detector of claim 18 wherein the timing signal is indicative of a symbol boundary in a synchronization pattern of a data packet of the received signal.

29. The timing detector of claim 18 wherein:

the timing signal is indicative of a symbol boundary in a synchronization pattern of a data packet of a received signal;

wherein the synchronization pattern includes symbols of a first polarity and symbols of a second polarity different from the first polarity,

wherein the phase information module includes an information phase remover module that removes information due to symbols being of different polarities.

30. A communication receiver including the timing detector of claim 18, the communication receiver further including a timing carrier correction module coupled to receive the timing signal and coupled to receive the received signal.

31. The communication receiver of claim 30 wherein:

the timing signal module generates a carrier error signal using the phase information;

the timing correction module is coupled to receive the carrier error signal.

32. A communication device including the communication receiver of claim 30 and further comprising:

an antennae, the timing carrier correction module and the timing detector coupled to the antennae to receive the received signal from the antennae.

33. The timing detector of claim 18 wherein data is encoded in the received signal as per the WLAN 802.11 wireless protocol.